misnomer. Mr. Pratt remarked that the collectors for Messrs. Godman and Salvin had no time to study habits, since they were told simply to collect as much material as possible.

—Mr. Banks presented the following paper:

SOME SPIDERS FROM NORTHERN LOUISIANA.

By Nathan Banks.

During the summer of 1891 I gathered a small collection of spiders from the vicinity of Shreveport, Louisiana. Although there are few peculiar or strange species in the collection, still it is of some interest, as so little is at present known of the distribution of our spiders. Yet there are several uncommon species, at least uncommon to one acquainted chiefly with more northern forms. Such are the *Prodidomus rufus*, *Tetragonophthalma dubia*, *Acartauchenius texana*, and *Thargalia aurata*. Two species quite rare in the North are *Histiagonia rostrata* and *Ballus youngi*.

About 127 species are recorded in this list, distributed in twenty-one families. The collection is representative of the southern Mississippi Valley fauna. This differs from the South Atlantic fauna in having some southwestern species. Seven species appear to be new and are here described; a few others, principally in the Lycosidæ, may prove to be new when the southern forms of this family are better known.

Theraphosidæ.

Eurypelma hentzi Girard.

Scytodidæ.

Loxosceles rufipes Duf.

Filistatidæ.

Filistata hibernalis Hentz.

Dysderidæ.

Ariadne bicolor Hentz.

Œcobiidæ.

Thalamia parietalis Hentz.

Pholcidæ.

Pholcus phalangoides Fuess.
Spermophora meridionalis Hentz.

Prodidomidæ.

Prodidomus rufus Hentz.

Drassidæ.

Gnaphosa sericata Koch.
Drassus bicolor Htz.
Cesonia bilineata Htz.
Prosthesima depressa Em.
Prosthesima atra Htz.
Megamyrmecion lepidium n. sp.

Clubionidæ.

Clubiona obesa Hentz.
Clubiona abboti Koch.
Chiracanthium inclusa Hentz.
Anyphæna gracilis Hentz.
Anyphæna decepta n. sp.
Gayenna parvula n. sp.
Phrurolithus alarius Hentz.
Thargalia ornata Hentz.
Thargalia aurata Hentz.
Thargalia sp.

AGALENIDÆ.

Agalena nævia Hentz.
Tegenaria sp.

DICTYNIDÆ.

Dictyna sublata Hentz.
Neophanes pallidus Marx.

THERIDIIDÆ.

Theridium tepidariorum Koch.
Theridium murarium Em.
Theridium frondeum Hentz.
Theridium albidum Bks.
Theridium australis n. sp.
Theridium inornatum n. sp.
Theridula sphærula Hentz.
Theridula quadripunctata Keys.
Steatoda borealis Hentz.
Teutana triangulosa Walck.
Lithyphantes fulvus Keys.
Lathrodectes mactans Koch.
Mysmena bulbifera Bks.
Histiagonia rostrata Em.
Ceratinella micropalpis Em.
Ceratinella emertoni Cambr.
Ceratinella lætabilis Cambr.
Ceratinopsis similis Bks.
Cornicularia sp. [near communis.]
Spiropalpis spiralis Em.
Lophocarenum crenatum Em.
Erigone autumnalis Em.
Tmeticus tridentatus Cambr.
Tmeticus parvus n. sp.
Acartauchenius texana n. sp.
Linyphia communis Hentz.
Floronia coccinea Hentz.
Bathyphantes anglicanum Hentz.
Bathyphantes formica Em.

MIMETIDÆ.

Mimetus interfector Hentz.

EPEIRIDÆ.

Acrosoma rugosa Hentz.
Mahadeva verrucosa Hentz.
Epeira strix Hentz.
Epeira domiciliorum Hentz.
Epeira trivittata Keys.
Epeira vulgaris Hentz.
E. volucripes Keys.
Epeira prompta Hentz.
E. parvula Keys.
Epeira bombycinaria Hentz.
Epeira insularis Hentz.
Epeira labyrinthea Hentz.
Epeira displicata Hentz.
Epeira foliata Hentz.
Epeira infumata Hentz.
Plectana stellata Hentz.
Abbotia gibberosa Hentz.
Abbotia placida Hentz.
Cyclosa conica Pall.
Argiope riparia Hentz.
Argiope transversa Em.
Argyroepeira hortorum Hentz.

TETRAGNATHIDÆ.

Tetragnatha grallator Hentz.
Tetragnatha laboriosa Hentz.

ULOBORIDÆ.

Uloborus plumipes Lucas.

THOMISIDÆ.

Xysticus gulosus Keys.
Xysticus maculatus Keys.
Synema parvula Hentz.
Misumena spinosa Keys.
Misumena oblonga Keys.
Runcinia aleatoria Hentz.
Philodromus vulgaris Hentz.
Philodromus imbecillus Keys.

LYCOSIDÆ.

Lycosa scutulata Hentz.
Lycosa ocreata Hentz.
Lycosa carolinensis Hentz.
Lycosa riparia Hentz.
Lycosa sp?
Trochosa cinerea Fabr.
Trochosa sp?
Pardosa milvina Hentz.
Pardosa sp? [near saxatilis.]
Pardosa sp? [near milvina.]
Pardosa sp? [young.]

Aulonia funerea Hentz.
Ocyale undata Hentz.

OXYOPIDÆ.

Oxyopes salticus Hentz.
Peucetia viridans Hentz.

PODOPHTHALMIDÆ.

Tetragonophthalma dubia Hentz.

ATTIDÆ.

Phidippus audax Hentz.
P. tripunctatus Hentz.
Phidippus rufus Hentz.
Phidippus insolens Hentz.
Philæus multicolor Hentz.
Philæus rimator Hentz.
Dendryphantes octavus Hentz
Dendryphantes nubilus Hentz.
Dendryphantes retarius Hentz.
Icius mitratus Hentz.
Astia vittata Hentz.
Cyrba tæniola Hentz.
Marptusa familiaris Hentz.
Admestina tibialis Koch.
Saitis pulex Hentz.
Habrocestum cœcatum Hentz.
Habrocestum cristatum Hentz.
Ballus youngi Peck.
Zygoballus parvus Hentz.
Zygoballus sexpunctatus Hentz.
Homalattus cyaneus Hentz.
Synemosyna scorpiona Hentz.
Salticus albocinctus Koch.

NEW SPECIES.

Megamyrmecion lepidum, n. sp.

Length ♀ 4.6 mm.; ceph. 1.8 mm. long, 1.1 mm. wide; pat. plus tibia IV 2. Cephalothorax uniform reddish, eyes partly surrounded with black; abdomen pale grayish, with a central darker stripe which covers the whole of the tip of the abdomen and is expanded on each side somewhat before the middle to surround an impressed dot; legs reddish, the patella and tibia I blackish; mouth-parts and sternum reddish, the latter with a brownish edge; venter gray, darker near tip; spinnerets pale, surrounded by a brown line; epigynum dark red-brown. Ceph. very narrow in front; eyes close together, the P. M. E. larger than the others and oval in shape, not half their diameter apart, closer to the P. S. E. than to each other; A. M. E. about half their diameter apart, and closer to the A. S. E. than to each other. Sternum a regular oval; fourth pair of legs the longest, the scopulas nearly absent, no spines beneath on tibia I, and none above on tibia IV. Abdomen depressed, about twice as long as wide. The epigynum shows an area longer than broad, truncate in front, rounded behind, containing a median cavity which is nearly filled by two spatulate bodies that project beyond the posterior margin of the cavity.

One example. Shreveport, La. Readily separated from the Californian species by its smaller size, marked body, different epigynum, etc.

Anyphæna decepta, n. sp.

Length ♀ 6–7 mm. Cephalothorax yellowish, clypeus and mandibles reddish brown or blackish; legs pale, darker near tips; sternum pale;

abdomen whitish or grayish, sometimes with a basal spear-shaped mark. Posterior eye-row procurved and longer than the anterior row, which is straight; A. M. E. about as large as A. S. E. Legs 4, 1, 2, 3; tibia IV no longer than tibia I, but the metatarsus IV much longer than that of leg I; spined most numerously toward the tips. Ventral furrow three times as far from spinnerets as from the epigynum; the latter shows a large rounded depression, broader than long, open and with divaricate edges behind, a little median cavity near the front part of depression.

Several specimens from Shreveport, La., and Brazos County, Texas. Readily distinguished from *A. fallens* Htz. by the absence of markings.

Gayenna parvula, n. sp.

Length ♀ 5 mm. Cephalothorax yellowish, darker on the head; mandibles and lip dark brown or black; sternum yellowish; legs pale, unspotted; abdomen brownish or dark grayish, in one specimen with a few indistinct spots. Head quite broad, low; mandibles prominent; A. M. E. smaller than A. S. E.; P. M. E. about twice their diameter apart; sternum once and a third longer than broad, truncate in front, broadest at second coxæ; legs moderately short, 4, 1, 2, 3; abdomen about twice as long as broad; ventral furrow nearer to the spinnerets than to the epigynum; the latter shows an area broader than long, trilobate behind, the side lobes pointed, the middle one larger and round, and from under each end of which there projects a dark line or ridge backward and outward.

Four examples from Shreveport, La., Kissimmee, Fla., and Washington, D. C.

Theridium australis, n. sp.

Length ♀ 2.6 mm., femur I 1.6 mm. Both dark and light specimens occur, dark ones with a reddish, light ones with a yellow cephalothorax, in both the head has a very distinct black spot extending down on the clypeus and usually a little pointed behind, the legs are yellowish without bands; the sternum reddish or yellowish; the abdomen gray with the serrated light stripe bordered with blackish which at each end is expanded into a large spot. Sometimes the stripe is nearly absent, but the large black spots, two above the spinnerets and one each side near base, remain very distinct. The cephalothorax is quite broad, much narrowed in front; the abdomen is sub-globose, and much more hairy than in the related species; the epigynum shows as a nearly straight transverse ridge, each end recurved in a small circle, in front are two long, rather slender, slightly curved dark marks.

Several specimens from Shreveport, La.

Theridium inornatum, n. sp.

Length ♂ 1 mm. Cephalothorax, legs and sternum yellowish, slightly blackish about the eyes; abdomen grayish. Similar to *T. unimaculatum*, but not one-half as large, without any black spot above or around the spinnerets. Leg I is long and large as in *T. unimaculatum;* the femur is much longer than the cephalothorax, and the tibia is longer than the metatarsus. The male palpus is truncate at tip with a large, stout, sharp-pointed projection from the outer corner, it is nearly as long as the width of the tarsus; the bulb is quite simple, it shows the outline of a curved tube, the style is short, stout and straight, with two curved pieces near by.

One from Shreveport, La., and one from Kissimmee, Fla.

Tmeticus parvus, n. sp.

Length ♂ 1.1 mm. Cephalothorax, mandibles and legs pale yellowish, eyes on black spots; sternum a little darker; abdomen grayish. Cephalothorax rather broad, head not much narrowed, but little elevated. Posterior eye-row straight, P. M. E. less than their diameter apart, rather closer to the nearly equal P. S. E.; A. M. E. smaller, hardly their diameter apart, about as far from the rather larger A. S. E.; mandibles stout, vertical, two teeth on front of each; sternum triangular, about as broad as long, truncate in front, narrowly projecting between the hind coxæ behind; legs quite long, tibia plus patella IV rather longer than the cephalothorax, no spines above on tibiæ; abdomen small, hardly longer and no wider than the cephalothorax, rather depressed, pointed at the tip. Male palpi quite long, the tibia is considerably enlarged at tip and has several broad projections at the tip. a triangular one projecting above the tarsus, and one on each side, with a smaller one below; the hook of palpus is rather narrow, there is an indentation on the upper edge near the tip, which latter is nearly circular beyond. There is a large dark oval body at base of bulb from the side of which arises the style, which curves toward the tip and then outside of the tarsus, where its tip rests in a hyaline sheath, below the latter is a triangular dark body; near tip of the bulb and just below the upper part of the style are two sharp-pointed dark teeth, rather close together and nearly equal in size.

One male, Shreveport, La.

Acartauchenius texana, n. sp.

Length ♂ 2 mm.; ♀ 2.5 mm. Cephalothorax yellowish or reddish, eyes with black rings; legs whitish or yellowish; abdomen whitish with a central black stripe and several apical black chevrons; sternum yellowish or reddish with a dark edge; venter pale; sides of abdomen are sometimes dark. The head of the ♂ is elevated and tipped with several strong black hairs; the elevation bears the P. M. E. near its base, they are very remote from the smaller A. M. E., from which the head slopes back to the top of the elevation. The mandibles are of moderate size and vertical;

the sternum is about as broad as long, and pointed between the hind coxæ; the legs are of moderate length, clothed with fine hair, and some long bristles; the abdomen is nearly twice as long as broad, rather convex above, rounded at base. The epigynum shows two oval dark cavities about their diameter apart, from the inner end of which extends a dark line backward and outward. The male palpus has the tibiæ short with a small sharp-pointed projection at tip above; the bulb is crossed obliquely by two prominent dark tubes; the slender style projects beyond the tarsus and then curves backward for a ways; in a side view the middle portion of the bulb projects much more than other parts; the tarsus is short, and seen from above rather triangular in outline.

Several specimens from Shreveport, La., Holly Springs, Miss., and Brazos Co., Texas.

Mr. Ashmead asked as to the comparative richness of the spider fauna of that region. Mr. Banks replied in general terms showing that the Attidæ, for example, are more numerous in species in the south than in the north. He believes that 400 species could be collected in time in such a locality as Shreveport. He had collected 300 species in the vicinity of Ithaca, N. Y., but in northern localities there are many of the minute rock-inhabiting forms which are absent in the south.

Mr. Schwarz spoke of the inequality in faunistic value of different groups of insects, instancing especially the comparatively slight value which the order Diptera seems to possess in this respect, and asked Mr. Banks' opinion of the value of the spiders. Mr. Banks replied that, in his opinion, the spiders are one of the best groups for the study of geographical distribution. They are wingless and cannot pass natural barriers. He spoke in general of the geographical distribution of the spiders of the United States, showing that the regions mapped by Dr. Merriam are, in the main, substantiated by this group. Mr. Ashmead said that while theoretically the spiders should be definitely restricted in distribution, practically he knew of so many wide-spread species that he doubted the very great faunistic value of the group. He referred to the possibility of the gossamer spiders being carried for very long distances by the wind, and Mr. Schwarz also stated that spiders are especially apt to be distributed by the hand of man. Mr. Schwarz further said that on his return to Washington from Texas various spiders were found in his trunk, and asked

Mr. Banks whether these were Texas species and would introduce a new element into the spider fauna of the District of Columbia. Mr. Banks replied that they were probably species which were already wide-spread, since this is the case with nearly all species of spiders which inhabit houses.

Dr. Gill spoke at length on the subject of the relative value of different groups of animals from the faunistic standpoint. He showed that we must consider the problem not only from the morphological but also from the paleontological standpoint and illustrated this point in a somewhat detailed consideration of some of the striking features of the vertebrate faunas of South America, Africa and India, deducing from this consideration the conclusion that the primitive faunas of South America and Africa were derived from the same common source, while the forms common to or similar to each other in Africa and India were derived from a common source at a later period. This means that South America and Africa were connected at an early period and that the connection between Africa and India was made at a comparatively recent date. He contended that the fresh-water fishes are the best group for the study of questions of geographical distribution, largely on account of their necessary restriction to the bodies of water which they inhabit. He showed that while the mollusks in particular, and also the insects, have changed comparatively little since relatively early geological times, the mammals have changed very greatly and the fishes occupy in this respect a position intermediate between the mollusks and insects on the one hand and mammals on the other.

Mr. Banks stated that, in his opinion, water forms are not as good as land forms for the study of geographical distribution; at all events this is the case with aquatic insects and arachnids. Fishes are by no means so limited in their distribution as land forms.

Mr. Marlatt spoke of the extraordinary distribution of *Bryobia pratensis*, which occurs from New England to California, and is known in the mountains of Montana at an elevation of 7,000 or 8,000 feet, remote from civilization, and also in the Southern States. What is probably the same species also occurs in Europe and in Australia. He considered this one of the most extraordinary instances of distribution known. Mr. Banks thought that

this species was simply an ordinary cosmopolite and showed that a number of other mites which he especially mentioned are also practically cosmopolitan. Mr. Howard called attention to the fact that this clover mite is peculiarly adapted to a commercial distribution. It may and probably has been carried commercially on nursery stock all over the world, while from the habits of the adults in crawling great distances in search of hibernating quarters it may be carried on anything coming from the household, or even upon the bodies of animals. Mr. Marlatt said that the occurrence of this insect upon cultivated trees and in households had only recently been recognized, and that its wide distribution was probably of very early occurrence. Mr. Schwarz stated that the occurrence of this Bryobia on very high mountains is very remarkable. Mr. Hubbard and himself have found it during the month of June in the Wasatch Mountains of Utah, at an elevation of from 10,000 to 11,000 feet. The eggs occurred in such quantities under stones between the snow fields that they could be scraped up by quarts.

—The next paper, which was presented by Mr. Schwarz, was entitled:

NOTE ON THE CEDRELA PSYLLIDS (GENUS FREYSUILA ALEMAN).

By E. A. Schwarz.

Many years ago, the late Dr. Eugene Dugès, of Guanajuato, Mex., sent to the lamented Dr. C. V. Riley some badly preserved specimens of a remarkable Psyllid, with the statement that this insect was greatly injurious to Cedrela trees.* They were then considered as belonging to an undescribed genus and species. What appears to be the same species was sent some years later by Dr. A. Ernst, from Caracas, Venezuela, and by Mr. F. W. Urich, from the island of Trinidad, W. I., the species being in either case marked as being injurious to Cedrela trees. Finally, in 1896, Dr. Alfred Dugès, of Guanajuato, Mex., forwarded additional specimens to Dr. L. O. Howard, with the statement that this Psyllid had been described by Dr. J. Aleman, under the name of *Frey-Suila dugesii*.

* Cedrela belongs to the family Sterculiaceæ. The wood of *C. odorata* (and perhaps also of other species of the same genus) has of late years acquired considerable economic importance, and it is stated that it is never attacked by any insect, not even the termites.